

Marked-up Version of Amended Claim 1

1. (Amended) A method for continuous casting bars, billet, and slabs from a melt in dimensional ranges of approximately 20 to 150 mm thickness and approximately 600 to 3500 mm width by means of an oscillating, water-cooled casting mold in cooperation with a submerged-entry nozzle, employing casting powder for formation of casting slag, the method comprising the steps of:

measuring local temperatures and local heat flux densities of a casting mold in a meniscus area of the melt critical for the surface quality of a slab; ~~and~~

maintaining ~~working~~ temperatures of the casting mold plates in the meniscus area within a predetermined temperature range (ΔT) by adjusting the operating parameters selected from the group consisting of the quantity of the cooling water, the throughput speed of the cooling water, the casting speed, and casting powder to be used, ~~important for the working temperature within a predetermined temperature range (ΔT) wherein for measuring the temperatures, thermoelements are arranged in the casting mold plates within a height range above and below the bath level and at different depths of the wall of the casting mold plates, wherein based on a temperature difference of at least two of the thermoelements positioned substantially at a same height and spacing from one another, the corresponding local~~

heat flux density is calculated; and

controlling, when knowing the optimal heat flux density or the maximum surface temperature, the best suited casting mold load for an optimal slab surface formation by adjusting at least one of the operating parameters selected from the group consisting of cooling water quantity and casting speed and casting powder.

Marked-up Version of Paragraph Bridging Pages 2 and 3

For example, it is known that, as a result of very different thermal conductivities of the different media interacting during continuous casting and the thus resulting resistances against thermal conduction and heat transmission, the formation of a strand skin of a continuous cast strand which is presently being formed and ~~especially~~ its surface properties, in particular, are variable within relatively wide limits. ~~In particular,~~ Particularly during thermal contact between the molten bath and the casting mold wall, the thickness of the liquid cinder or slag of melted casting powder plays an important role; ~~because of its extremely minimal specific conductivity of approximately 1 W/K x m because~~ it presents a significant resistance for the heat transmission between the melt and the casting mold plates because of its extremely minimal specific conductivity of approximately 1 W/K x m. In contrast to the liquid slag, copper has an extremely high thermal conductivity of approximately 360 W/K x m.

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The temperature curves can be recorded online and shown on a display by means of an electronic measuring device. They can be used to keep the temperature constant in the predetermined temperature range ~~window~~ (ΔT) by automatic control of the decisive operating parameters in order to achieve an optimal surface formation, for example, in the case of a thin slab.